

THE BOTANICAL MAGAZINE TOKYO

VOL. 103 (1990)

Numbers 1069-1072, Pages 1-491

EDITORIAL BOARD

MASAYUKI KATSUMI : Editor-in-Chief, *Department of Biology, International Christian University, Mitaka, Tokyo 181*

MASAHIRO KATO : Editor, *Botanical Gardens, University of Tokyo, Hakusan, Bunkyo-ku, Tokyo 112*

MASAMITSU WADA : Editor, *Department of Biology, Tokyo Metropolitan University, Fukazawa, Setagaya-ku, Tokyo 158*

ROGER DEL MORAL, *University of Washington*

ZENNOSUKE IWATSUKI, *Hiroshima University*

TSUNEYOSHI KUROIWA, *University of Tokyo*

ROBERT F. LYNDON, *University of Edinburgh*

TAKAO MINAMIKAWA, *Tokyo Metropolitan University*

HANS MOHR, *University of Freiburg*

TATSUO OKU, *Kyushu University*

PETER, H. RAVEN, *Missouri Botanical Garden*

MASAYUKI TAKAHASHI, *University of Tokyo*

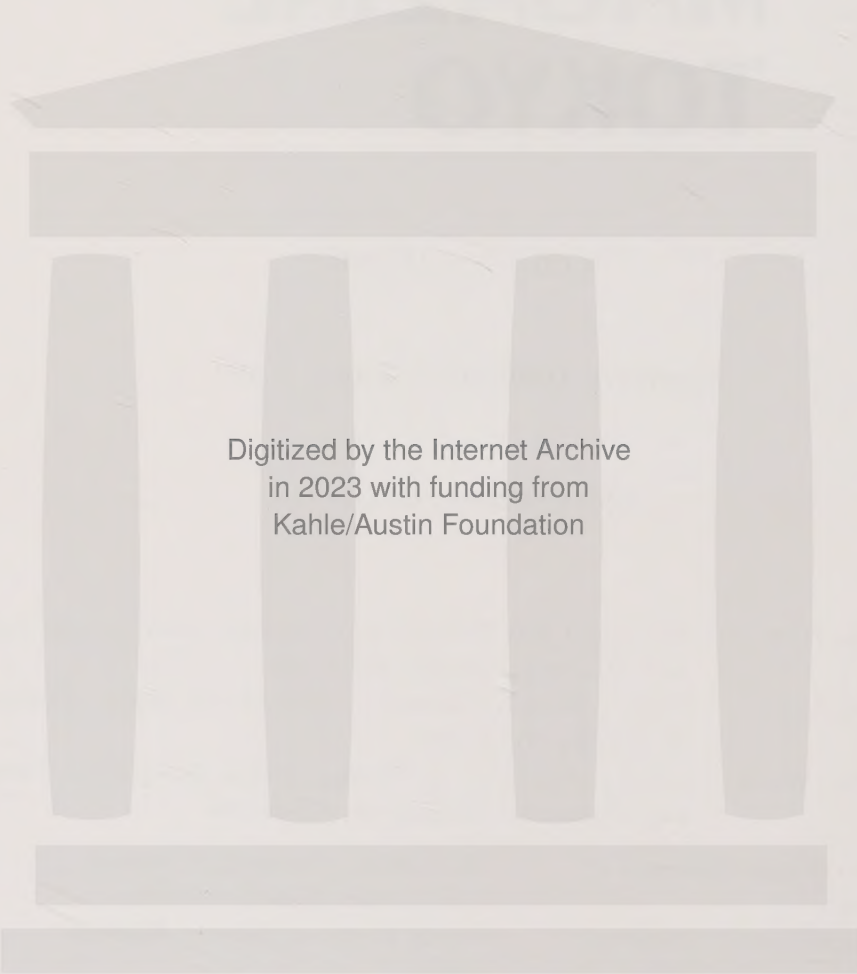
MASAKAZU TATEWAKI, *Hokkaido University*

HIROSHI TOBE, *Kyoto University*

HIDEO TSUJI, *Kyoto University*

TAKUO YAMAKURA, *Osaka City University*

THE BOTANICAL SOCIETY OF JAPAN



Digitized by the Internet Archive
in 2023 with funding from
Kahle/Austin Foundation

CONTENTS

THE BOTANICAL MAGAZINE, TOKYO

Vol. 103

No. 1069 (March 1990)

DARNAEDI, D., M. KATO AND K. IWATSUKI: Electrophoretic Evidence for the Origin of <i>Dryopteris yakusilvicola</i> (Dryopteridaceae)	1
TEROUCHI, N., S. HASEZAWA, H. MATSUSHIMA, Y. KANEKO AND K. SYÔNO: Observation by SEM of the Attachment of <i>Agrobacterium tumefaciens</i> to the Surface of Vinca, Asparagus and Rice Cells	11
TAKASO, T. AND H. TOBE: Seed Coat Morphology and Evolution in Celtidaceae and Ulmaceae (Urticales)	25
PJON, C.-J., S.-d. KIM AND J.-y. PAK: Effects of Spermidine on Chlorophyll Content, Photosynthetic Activity and Chloroplast Ultrastructure in the Dark and under Light	43
FUJISHIMA, H., H. OKADA, Y. HORIO AND T. YAHARA: The Cytotaxonomy and Origin of <i>Ranunculus yaegataensis</i> , an Endemic Taxon of Yakushima Island	49
KAWAKUBO, N.: Dioecism of the Genus <i>Callicarpa</i> (Verbenaceae) in the Bonin (Ogasawara) Islands	57
AMANO, M.: Biosystematic Study of <i>Sedum</i> L. Subgenus <i>Aizoon</i> (Crassulaceae) I. Cytological and Morphological Variations of <i>Sedum aizoon</i> L. var. <i>floribundum</i> Nakai	67
RIDGE, R.W.: Cytochalasin-D Causes Abnormal Wall-Ingrowths and Organelle-Crowding in Legume Root Hairs	87
ZHANG, X., I. INOUE AND M. CHIHARA: An Unusual Short Flagellum in <i>Mallomonas guttata</i> (Synurophyceae, Chrysophyta)	97

No. 1070 (June 1990)

HIZUME, M., M. ARAI AND A. TANAKA: Chromosome Banding in the Genus <i>Pinus</i> III. Fluorescent Banding Pattern of <i>P. luchuensis</i> and Its Relationships among the Japanese Diploxylon Pines	103
OGINUMA, K., P.H. RAVEN AND H. TOBE: Karyomorphology and Relationships of Celtidaceae and Ulmaceae (Urticales)	113
TERASAKA, O. AND T. NITSU: Unequal Cell Division and Chromatin Differentiation in Pollen Grain Cells. II. Microtubule Dynamics Associated with the Unequal Cell Division	133
SAKAGUCHI, S., T. HOGETSU AND N. HARA: Specific Arrangements of Cortical Microtubules are Correlated with the Architecture of Meristems in Shoot Apices of Angiosperms and Gymnosperms	143
SATO, T.: A Quantitative Comparison of Foliage Development among Allopatric Ferns, <i>Dryopteris crassirhizoma</i> , <i>D. coreano-montana</i> and <i>D. filix-mas</i>	165
YAMAGUCHI, H., K. ICHIHARA, K. TAKENO, Y. HORI AND T. SAITO: Diversities in Morphological Characteristics and Seed Germination Behavior in Fruits of <i>Salsola komarovii</i> Iljin	177
GREEN, J.C. AND T. HORI: The Architecture of the Flagellar Apparatus of <i>Prymnesium patellifera</i> (Prymnesiophyta)	191
SOEJIMA, A.: The Histogenesis of Integuments in Some Species of Menispermaceae	209
NEMOTO, T. AND H. OHASHI: Organographic and Ontogenetic Studies on the Inflorescence of	

<i>Lespedeza cuneata</i> (Dum.-Cours.) G. Don (Leguminosae).....	217
--	-----

INVITED ARTICLE

MIMURO, M.: Studies on Excitation Energy Flow in the Photosynthetic Pigment System; Structure and Energy Transfer Mechanism.....	233
---	-----

No. 1071 (September 1990)

NISHIDA, M., T. OHSAWA AND H. NISHIDA: Anatomy and Affinities of the Petrified Plants from the Tertiary of Chile (VI)	255
AKIYAMA, H.: A Morphological Study of Branch Development in Mosses with Special Reference to Pseudoparaphyllia	269
THORANISORN, S., P. SAHUNALU AND K. YODA: Density Effects and Self-Thinning in Even- Aged Pure Stands of <i>Eucalyptus camaldulensis</i> Dehn.	283
SUZUKI, E.: Dendrochronology in Coniferous Forests around Lake Rara, West Nepal	297
ABDEL-RAHMAN, T.M.A., A-A.M. SALAMA, M.I.A. ALI AND N.A-H. THARWAT: Fibrinolytic Activity of Some Fungi Isolated from Self-Heated Composted Fertilizer	313
KAWAI, H. AND I. YAMADA: The Specific Identity and the Life History of Japanese <i>Syrin-</i> <i>goderma</i> (Syringodermatales, Phaeophyceae)	325
SHIMIZU, T., S. TAKAO AND A. TAKAO: Trisporangiate Anthers Found in the Genus <i>Impatiens</i> (Balsaminaceae)	335
MURATA, J.: Developmental Patterns of Pedate Leaves in Tribe Areae (Araceae-Aroideae) and Their Systematic Implication	339

INVITED ARTICLE

MASUDA, Y.: Auxin-Induced Cell Elongation and Cell Wall Changes	345
MURATA, J.: Present Status of <i>Arisaema</i> Systematics	371

No. 1072 (December 1990)

KURITA, S., T. OKABE AND J. MIYAMOTO: Intraspecific Polymorphism of Pollen Sculpture in <i>Paris tetraphylla</i> A. Gray (Liliaceae)	383
WADA, M., T. MURATA AND M. SHIBATA: Changes in Microtubule and Microfibril Arrangement during Polarotropism in <i>Adiantum</i> Protonemata	391
WADA, M., T. MURATA, H. SHIMIZU AND N. KONDO: A Model System to Study the Effect of SO ₂ on Plant Cells. III. Effects of Sulfite on the Ultrastructure of Fern Protonemal Cells	403
MURAKAMI, N., Y. TANAKA, K. TAKISHIMA, Y. MINOBE, M. MATSUOKA, S. KIYOTA, S. HATANAKA AND K. SAKANO: Structure of cDNA Clones for the Small Subunit of Ribulose-1,5-bisphosphate Carboxylase/Oxygenase from a Fern (<i>Asplenium catar-</i> <i>actarum</i> Rosenstock, Aspleniaceae), and its Comparison with those of Various Seed Plants	419
MIZUNO, K. AND T. SUZAKI: Effects of Anti-mictotubule Drugs on <i>in vitro</i> Polymerization of Tubulin from Mung Bean	435
ITO, M. AND M. ONO: Allozyme Diversity and the Evolution of <i>Crepidiastrum</i> (Compositae) on the Bonin (Ogasawara) Islands	449
KATO, M., N. NAKATO, S. AKIYAMA AND K. IWATSUKI: The Systematic Position of <i>Asplenium</i> <i>cardiophyllum</i> (Aspleniaceae).....	461

INVITED ARTICLE

YAMAMOTO, K.T. : Photoreversible Absorption Change and Domain Structure of Phytochrome	469
--	-----

AUTHOR INDEX

THE BOTANICAL MAGAZINE, TOKYO

Vol. 103

ABDEL-RAHMAN, T.M.A.	313	MIYAMOTO, J.	383
AKIYAMA, H.	269	MIZUNO, K.	435
AKIYAMA, S.	461	MURAKAMI, N.	419
ALI, M.I.A.	313	MURATA, J.	339, 371
AMANO, M.	67	MURATA, T.	391, 403
ARAI, M.	103	NAKATO, N.	461
CHIHARA, M.	97	NEMOTO, T.	217
DARNAEDI, D.	1	NIITSU, T.	133
FUJISHIMA, H.	49	NISHIDA, H.	255
GREEN, J.C.	191	NISHIDA, M.	255
HARA, N.	143	OGINUMA, K.	113
HASEZAWA, S.	11	OHASHI, H.	217
HATANAKA, S.	419	OHSAWA, T.	255
HIZUME, M.	103	OKABE, T.	383
HOGETSU, T.	143	OKADA, H.	49
HORI, T.	191	ONO, M.	449
HORI, Y.	177	PAK, J.-y.	43
HORIO, Y.	49	PJON, C.-J.	43
ICHIHARA, K.	177	RAVEN, P.H.	113
INOUE, I.	97	RIDGE, R.W.	87
ITO, M.	449	SAHUNALU, P.	283
IWATSUKI, K.	1, 461	SAITO, T.	177
KANEKO, Y.	11	SAKAGUCHI, S.	143
KATO, M.	1, 461	SAKANO, K.	419
KAWAI, H.	325	SALAMA, A.-A.M.	313
KAWAKUBO, N.	57	SATO, T.	165
KIM, S.-d.	43	SHIBATA, M.	391
KIYOTA, S.	419	SHIMIZU, H.	403
KONDO, N.	403	SHIMIZU, T.	335
KURITA, S.	383	SOEJIMA, A.	209
MASUDA, Y.	345	SUZAKI, T.	435
MATSUOKA, M.	419	SUZUKI, E.	297
MATSUSHIMA, H.	11	SYÔNO, K.	11
MIMURO, M.	233	TAKAO, A.	335
MINOBE, Y.	419	TAKAO, S.	335

TAKASO, T.	25	TOBE, H.	25, 113
TAKENO, K.	177	YAHARA, T.	49
TAKISHIMA, K.	419	YAMADA, I.	325
TANAKA, A.	103	YAMAGUCHI, H.	177
TANAKA, Y.	419	YAMAMOTO, K.T.	469
TERASAKA, O.	133	YODA, K.	283
TEROUCHI, N.	11	WADA, M.	391, 403
THARWAT, N.A-H.	313	ZHANG, X.	97
THORANISORN, S.	283		

Index of Key Words

A

Abnormal cell wall ingrowth	87
Abscissic acid	177
<i>Adiantum capillus-veneris</i> L. (fern)	391, 403
Agamosporous species	1
<i>Agrobacterium tumefaciens</i>	11
Air pollution (SO ₂)	403
Allopatric ferns	165
Allozyme diversity	449
Annual rings	297
Antenna complex	233
Anti-microtubule drugs	435
<i>Arisaema</i>	339, 371
Aroid systematics	339
Aspleniaceae	419
<i>Asplenium cardiophyllum</i>	461
Attachment	11
Auxin	345

B

(1→3), (1→4)- β -D-Glucan	345
Biliprotein	469
Bonin Islands	57, 449
Branch primordia	269
<i>Brassica campestris</i>	43

C

<i>Callicarpa</i>	57
<i>Campylotropis</i>	217
cDNA	419
Cell elongation	345
Cell expansion	143
Cell wall	345
Celtidaceae	25, 113
<i>Chilechicoxylon</i>	255
Chlorophyll bleaching	43
Chromomycin A ₃	103
Chromosomal variation	67
Chromosome	113
Chromosome number	461
Cladistics	371
Climatic change	297
Co-cultivation	11
Composed samples	313
Coniferous forest	297
Cortical microtubule	143
<i>Crepidiastrum</i>	449
Cytochalasin-D	87

D

DAPI	103
Dendrochronology	297
Density	283
Dioecy	57
Dissection index	165
Domain structure (phytochrome)	469
Dormancy	143
<i>Dryopteris yakusilvicola</i>	1
<i>Dryopteris</i> ferns	165

E

Energy transfer	233
Enzyme electrophoresis	1
<i>Eucalyptus</i>	283
Extracellular fibril	11

F

F-actin fragments	87
Fertile F ₁ hybrid	49
Fibrinolytic fungi	313
Flagella	191
Flagellar apparatus	191
Flagellar appendages	97
Flagellar roots	191
Fluorescent chromosome banding	103
Foliage structure	165
Freeze-substitution	87

G

Gymnosperms	143
-------------	-----

H

Heterocarpy	177
Higher plant tubulin	435
Hozumi's model	283
Hybrid origin	1
<i>Hymenasplenium</i>	461

I

Immunofluorescence	133
<i>Impatiens</i> subgen. <i>Acaulimpatiens</i>	335
<i>in vitro</i> assembly of microtubules	435
Inaperturate pollen grains	57
India	335
Inflorescence phyllomes	217
Inflorescence	217

Integument	209	<i>Pinus luchuensis</i>	103
K		Polarotropism	391
Karyomorphology	113	Pollen	383
Karyotype	49, 103	Pollen grain	133
<i>Kummerowia</i>	217	Pollen sacs	335
L		Polymorphism	383
<i>Laurinum</i>	255	Polyploid complex	67
Leaf development	339	Proteolytic fungi	313
<i>Lespedeza cuneata</i>	217	<i>Protexylon</i>	255
Life history	325	Protonema (fern)	391, 403
Liliaceae	383	Prymnesiophyta	191
M		<i>Prymnesium</i>	191
<i>Mallomonas guttata</i>	97	Pseudoparaphyllia	269
Mechanical property	345	R	
Menispermaceae	209	<i>Ranunculus silerifolius</i>	49
Microfibril	391, 403	<i>Ranunculus yaegataensis</i>	49
Microtubule	133, 391, 403	Rapid-freeze	87
Molecular evolution	419	Ribulose-1, 5-bisphosphate carboxylase/ oxygenase	419
Morphological variation	67	S	
Morphology	269, 371	<i>Salsola komarovii</i>	177
Mosses	269	<i>Sedum aizoon</i> var. <i>floribundum</i>	67
Mung bean	435	Seed coat	25
N		Seed	25
Nepal	297	Seed germination	177
Nuclear movement	133	Self-thinning	283
O		SEM observation	11
<i>Oidiodendron flavum</i>	313	Senescence	43
Organelle aggregation	87	Sex expression	57
Organography and ontogeny	217	Shoot apex	143
Oceanic islands	449	Short flagellum	97
Outline of blade	165	Small subunit	419
Ovule	209	Spermidine	43
P		Spore wall ornamentation	461
Palynology	383	Staminate flower	57
Paraphyllia	269	Sulfite	403
<i>Paris</i>	383	Synurophyceae	97
<i>Paris tetraphylla</i>	383	<i>Syringoderma abyssicola</i>	325
Patagonia	255	Syringodermatales	325
Petrified wood	255	Systematics	371, 461
Phaeophyceae	325	T	
Photochromism	469	Taxonomy	325
Photomorphogenesis	469	Tertiary	255
Photosynthesis	233	Tetrasporangiate anthers	335
Phototropism	391	<i>Tradescantia paludosa</i>	133
Phylogeny	371	Transformation	11
Phytochrom	469	Trisporangiate anthers	335
Pigment systems	233	Tunica-carpus organization	143
<i>Pinellia</i>	339	<i>Typhonium</i>	339

U

Ulmaceae	25, 113
Ultrastructure	97, 191
Unequal division	133
Unitegmy	209
Urticales	25, 113

V

Vascular anatomy	461
------------------	-----

W

Water stress	177
--------------	-----

X

Xyloglucan	345
------------	-----

Y

Yakushima Island	49
<i>Youngia</i>	449

Acknowledgement to Reviewers for Vol. 103

The Editorial Board is grateful to the following reviewers for their cooperation in examining the manuscripts submitted to the Botanical Magazine, Tokyo, Vol. 103.

FUKUDA, Y.
FUKUMURA, T.
HAUFLER, C.
HARA, N.
HIGASHI, S.
HIROSE, T.
HOGETSU, T.
HOZUMI, K.
IMAICHI, R.
IMAZEKI, H.
INOUE, K.
ITO, M.
IWATSUKI, K.
KAMISAKA, S.
KAWAHARA, T.
KAWAKUBO, N.
KANAI, H.
KATO, T.
KAWANO, S.
KOHYAMA, T.
KURAISHI, S.
KURITA, S.
MINAKI, M.
NAGAMASU, H.
NAKAMURA, H.
NIITSU, T.
NISHINO, E.
NOGUCHI, J.
OHASHI, H.
OHBA, H.
OHYAMA, K.
OKAMOTO, M.
ONO, M.
SASAKI, R.

SEKI, T.
SHIBAOKA, H.
SHIMIZU, Y.
SOMA, K.
SUGIYAMA, M.
TAKAHASHI, E.
TAKAHASHI, M.
TAMURA, M.
TANAKA, J.
TANAKA, R.
UEDA, K.
WATANABE, A.
WATANABE, K.
WATANABE, S.
YAHARA, T.
YAMASHITA, T.
YAMAZAKI, K.
YAMAZAKI, T.

